

CONTENTS — 1969, Nos. 1-4

AHLSTROM, ELBERT H. AND H. GEOFFREY MOSER	
A new gonostomatid fish from the Tropical Eastern Pacific	493
BAKER, MYRON CHARLES	
The effect of severing the opercularis muscle on body orientation of the leopard frog, <i>Rana pipiens</i>	613
BARBOUR, ROGER W., JAMES W. HARDIN, JAMES P. SCHAFER, AND MICHAEL J. HARVEY	
Home range, movements, and activity of the dusky salamander <i>Desmognathus fuscus</i>	293
BARTHALMUS, GEORGE T. AND EDWARD D. BELLIS	
Homing in the northern dusky salamander, <i>Desmognathus fuscus fuscus</i> (Rafinesque)	148
BARTHOLOMEW, GEORGE A. (see LASIEWSKI, ROBERT C.)	
BELLIS, EDWARD D. (see BARTHALMUS, GEORGE T.)	
BELLIS, EDWARD D. (see CURRIE, WILLIAM)	
BENES, ELINOR S.	
Behavioral evidence for color discrimination by the whiptail lizard, <i>Cnemidophorus</i> <i>tigris</i>	707
BERRY, FREDERICK H.	
<i>Elagatis bipinnulata</i> (Pisces: Carangidae): Morphology of the fins and other characters	454
BRANSON, BRANLEY AND JAMES B. CAMPBELL	
Hybridization in the darters <i>Etheostoma spectabile</i> and <i>Etheostoma radiosum cyanorum</i>	70
BRIDGES, KENT W. (see VALENTINE, DAVID W.)	
BRIGGS, JOHN C.	
A new clingfish (Gobiesocidae) of the genus <i>Tomicodon</i> from Ecuador	75
BRIGGS, JOHN C.	
A new genus and species of clingfish (family Gobiesocidae) from the Bahama Islands	332
BRIGGS, JOHN C.	
A new species of <i>Lepadichthys</i> (Gobiesocidae) from the Seychelles, Indian Ocean	464
BRIGGS, JOHN C.	
The clingfishes (Gobiesocidae) of Panama	774
BROWN, HERBERT A.	
The heat resistance of some anuran tadpoles (Hylidae and Pelobatidae)	138
BRYAN, CHARLES F.	
Variation in selected meristic characters of some basses, <i>Micropterus</i>	370
BURNS, BARRY	
Oral sensory papillae in sea snakes	617
BUSTARD, H. ROBERT	
Micro-environment of a natural lizard nest	536
BUSTARD, H. ROBERT AND IAN GRANT	
Recording activity of small reptiles and amphibians	843
CAILLOUET, CHARLES W. JR., WILLIAM S. PERRET, AND BENNIE J. FONTENOT, JR.	
Hermaphroditic gonads produced in <i>Oryzias latipes</i> by X-radiation during embryonic stages	195
CALDWELL, DAVID K. AND WARREN F. RATHJEN	
Unrecorded West Indian nesting sites for the leatherback and hawksbill sea turtles, <i>Dermochelys coriacea</i> and <i>Eretmochelys imbricata</i>	622
CAMPBELL, JAMES B. (see BRANSON, BRANLEY)	
CAMPDEN-MAIN, SIMON M.	
Status of the skink, <i>Leiolopisma smithi</i> Cochran	842
CARPENTER, JAMES S.	
First record of the long-snouted ratfish, <i>Rhinochimaera atlantica</i> in the Gulf of Mexico	203
CLARK, DAVID B. AND J. WHITFIELD GIBBONS	
Dietary shift in the turtle <i>Pseudemys scripta</i> (Schoepff) from youth to maturity	704
CLIPPER, GEORGE E. (see COLLETTE, BRUCE B.)	
COLLETTE, BRUCE B. (see MATSUMOTO, WALTER M.)	
COLLETTE, BRUCE B., ROBERT H. GIBBS, JR., AND GEORGE E. CLIPPER	
Vertebral numbers and identification of the two species of dolphin (<i>Coryphaena</i>)	630
CONAWAY, C. H. (see METTER, D. E.)	
COURTENAY, WALTER R. JR. (see WEIGL, GLENN L.)	
CURRIE, WILLIAM AND EDWARD D. BELLIS	
Home range and movements of the bullfrog, <i>Rana catesbeiana</i> Shaw, in an Ontario pond	688

DAWSON, C. E.	
A new Eastern Pacific sand stargazer, <i>Dactyloscopus byersi</i> (Pisces: Dactyloscopidae)	44
DAWSON, C. E.	
A new seven-spined goby, <i>Gobiosoma (Austrogobius) polyporosum</i> , from the Pacific Coast of Panama	510
DENTON, THOMAS E. AND WILLIAM M. HOWELL	
A technique for obtaining chromosomes from the scale epithelium of teleost fishes	392
DENTON, THOMAS E. (see HOWELL, WILLIAM MIKE)	
DEWITT, HUGH H.	
A second species of the family Cottidae from the New Zealand region	30
DOLE, JIM W. (see TRACY, C. RICHARD)	
DOMEY, RICHARD G. (see WEIGL, GLENN L.)	
DOWLING, HERNDON G.	
Relations of some African colubrid snakes	234
DUNLAP, DONALD G.	
Evidence for a daily rhythm of heat resistance in the cricket frog, <i>Acris crepitans</i>	852
ECKARDT, MICHAEL J. (see KLUGE, ARNOLD G.)	
ECKROAT, L. R. AND J. E. WRIGHT	
Genetic analysis of soluble lens protein polymorphism in brook trout, <i>Salvelinus fontinalis</i>	466
EFFORD, IAN E. AND JACK A. MATHIAS	
A comparison of two salamander populations in Marion Lake, British Columbia	723
ESTES, RICHARD	
The Batrachosauroididae and Scapherpetontidae, Late Cretaceous and Early Cenozoic salamanders	225
ESTES, RICHARD	
Studies on fossil phyllodont fishes: Interrelationships and evolution in the Phyllodontidae (Albuloidae)	317
ESTES, RICHARD (see NEVO, EVIATAR)	
FERGUSON, GARY W.	
Intratradal discrimination in male side blotched lizards, <i>Uta stansburiana</i>	188
FOLKERTS, GEORGE W. AND ROBERT H. MOUNT	
A new subspecies of the turtle <i>Graptemys nigrinoda</i> Cagle	677
FONTENOT, BENNIE J. JR. (see CAILLOUET, CHARLES W. JR.)	
FRITTS, THOMAS H.	
The systematics of the parthenogenetic lizards of the <i>Cnemidophorus cozumela</i> complex	519
FUJINO, KAZUO	
Atlantic skipjack tuna genetically distinct from Pacific specimens	626
GAILLÉ, R. SPENCER	
The first record of the bathyclupeid, <i>Bathyclupea argentea</i> Goode and Bean, in the Gulf of Mexico with notes on its distribution	629
GANDOL, CHARLES P. (see HINSCH, HANNAH)	
GANS, CARL	
Comments on inertial feeding	855
GIBBONS, J. WHITEFIELD	
Ecology and population dynamics of the chicken turtle, <i>Dirochelys reticularia</i>	669
GIBBONS, J. WHITEFIELD (see CLARK, DAVID B.)	
GIBBS, ROBERT H. JR. (see COLLETTE, BRUCE B.)	
GILBERT, CARTER R.	
Systematics and distribution of the American cyprinid fishes <i>Notropis ariommus</i> and <i>Notropis teleostes</i>	474
GOODYEAR, RICHARD H.	
Records of the alepocephalid fish <i>Photostylus pycnopterus</i> in the Indian and Pacific oceans	398
GRANT, IAN (see BUSTARD, H. ROBERT)	
GUTHIERZ, ELMER J.	
Hermafroditism in <i>Citharichthys cornutus</i> (Heterosomata, family Bothidae)	352
GUTTMAN, SHELDON I.	
Blood protein variation in the <i>Bufo americanus</i> species group of toads	243
HAEFNER, PAUL A., JR.	
Occurrence of a larval alligator fish (Agonidae) in brackish water	201
HARBO, SAMUEL J. (see MORROW, JAMES E.)	
HARDIN, JAMES W. (see BARBOUR, ROGER W.)	

44	HARVEY, JOHN S. JR. (see MEADE, THOMAS G.)	
510	HARVEY, MICHEAL J. (see BARBOUR, ROGER W.)	
392	HERGENRADER, GARY L.	
30	Spawning behavior of <i>Perca flavescens</i> in aquaria	839
234	HINSCH, HANNAH AND CHARLES P. GANDAL	
852	The effects of etorphine (M-99), Oxymorphone hydrochloride and meperidine hydrochloride in reptiles	404
is 466	HOBSON, EDMUND S.	
723	Possible advantages to the blenny <i>Runula azalea</i> in aggregating with the wrasse <i>Thalassoma lucasanum</i> in the tropical eastern Pacific	191
225	HOBSON, EDMUND S.	
317	Remarks on aquatic habits of the Galapagos marine iguana, including submergence times, cleaning symbiosis, and the shark threat	401
188	HOFF, FRANK H. JR.	
677	Ambicoloration of an adult flounder, <i>Paralichthys alboguttatus</i>	208
519	HOUSER, HAROLD L. JR. AND DALLAS A. SUTTON	
626	Morphologic and karyotypic differentiations of the California frogs <i>Rana muscosa</i> and <i>R. boylii</i>	184
If 629	HOWELL, WILLIAM M. (see DENTON, THOMAS E.)	
855	HOWELL, WILLIAM MIKE AND THOMAS E. DENTON	
669	Chromosomes of ammocoetes of the Ohio brook lamprey, <i>Lampetra aepyptera</i>	393
474	HUBBS, CARL L. (see MILLER, ROBERT RUSH)	
398	HUBBS, CLARK AND ALEX E. PEDEN	
201	<i>Gambusia georgei</i> sp. nov. from San Marcos, Texas	357
723	HULLEY, P. ALEXANDER AND REINHOLD E. RAU	
225	A female <i>Regalecus glesne</i> from Cape Province, South Africa	835
317	JOHNSON, CLIFFORD RAY	
188	Contributions to the biology of the showy snailfish, <i>Liparis pulchellus</i> (Liparidae)	830
519	JOHNSON, DONALD W. AND W. L. MINCKLEY	
626	Natural hybridization in buffalofishes, genus <i>Ictalurus</i>	198
If 629	JOHNSON, ROBERT KARL	
855	A review of the fish genus <i>Kali</i> (Perciformes: Chiasmodontidae)	386
669	KITCHELL, JAMES F.	
474	Thermophilic and thermophobic responses of snakes in a thermal gradient	189
398	KLAASSEN, HAROLD E. (see MINCKLEY, C. O.)	
201	KLUGE, ARNOLD G.	
723	An interpretation of the status of <i>Gymnodactylus tenuis</i> Hallowell (Sauria: Gekkonidae)	623
225	KLUGE, ARNOLD G. AND MICHAEL J. ECKARDT	
317	<i>Hemidactylus garnotii</i> Duméril and Bibron, a triploid all-female species of gekkonid lizard	651
188	KOEHN, RICHARD K.	
677	Hemoglobins of fishes of the genus <i>Catostomus</i> in Western North America	21
519	LASIEWSKI, ROBERT C. AND GEORGE A. BARTHOLOMEW	
626	Condensation as a mechanism for water gain in nocturnal desert poikilotherms	405
If 629	LAVENDA, NATHAN (see MAHMOUD, IBRAHIM Y.)	
855	LOOS, JULES J. AND WILLIAM S. WOOLCOTT	
669	Hybridization and behavior in two species of <i>Percina</i> (Percidae)	374
474	LOWENSTEIN, J. M. AND R. C. STEBBINS	
398	Iodine metabolism and thyroid activity in parietialectomized tropical lizards	664
201	LUX, F. E. AND J. V. MAHONEY	
723	First record of the channel bass, <i>Sciaenops ocellatus</i> (Linnaeus), in the Gulf of Maine	632
519	MAHMOUD, IBRAHIM Y. AND NATHAN LAVENDA	
626	Establishment and eradication of food preferences in red-eared turtles	298
If 629	MAHONEY, J. V. (see LUX, F. E.)	
855	MARTIN, A. A.	
669	Emergence from hibernation in an Australian burrowing frog	176
474	MARTOF, BERNARD S.	
398	Prolonged inanition in <i>Siren lacertina</i>	285
201	MATHIAS, JACK A. (see EFFORD, IAN E.)	
723	MATSUMOTO, WALTER M., FRANK H. TALBOT, BRUCE B. COLLETTE, AND RICHARD S. SHOMURA	
519	Pacific bonito (<i>Sarda chiliensis</i>) and skipjack tuna (<i>Katsuwonus pelamis</i>) without stripes	397
669	MAYERS, LYNDON J. AND FRANKLIN L. ROBERTS	
474	Chromosomal homogeneity of five populations of alewives, <i>Alosa pseudoharengus</i>	313

McCLANAHAN, L. JR. (see SHOEMAKER, V. H.)	
McCOSKER, JOHN E.	
A behavioral correlate for the passage of lymphocystis disease in three blennioid fishes	636
McCoy, CLARENCE J.	
Snakes of the genus <i>Coniophanes</i> (Colubridae) from the Yucatán Peninsula, México	847
McDOWALL, R. M.	
A juvenile of <i>Aplochion Jenyns</i>	631
McDOWALL, R. M.	
Relationships of galaxioid fishes with a further discussion of salmoniform classification	796
McEACHRAN, J. D. (see MUSICK, J. A.)	
McKINNEY, CHARLES O.	
Experimental hybridization in three populations of the lizard <i>Uta stansburiana</i>	289
MEADE, THOMAS G. AND JOHN S. HARVEY, JR.	
Effects of helminth parasitism of <i>Posthodiplostomum minimum</i> on serum proteins of <i>Lepomis macrochirus</i> and observations on piscine serological taxonomy	638
METTER, D. E. AND C. H. CONAWAY	
The influence of hormones on the development of breeding glands in <i>Microhyla</i>	621
METTER, DEAN E. AND ROBERT J. PAUKEN	
An analysis of the reduction of gene flow in <i>Ascaphus truei</i> in the northwest U. S. since the Pleistocene	301
MILLER, ROBERT RUSH AND CARL L. HUBBS	
Systematics of <i>Gasterosteus aculeatus</i> , with particular reference to intergradation and introgression along the Pacific Coast of North America: A commentary on a recent contribution	52
MILLER, ROBERT VICTOR	
Constancy of epibranchial organs and fourth epibranchial bones within species groups of clupeid fishes	308
MILLER, ROBERT VICTOR AND JOHN W. VAN LANDINGHAM	
Additional procedures for effective enzyme clearing and staining of fishes	829
MINCKLEY, W. L.	
Attempted re-establishment of the Gila topminnow within its former range	193
MINCKLEY, W. L. (see JOHNSON, DONALD W.)	
MINCKLEY, C. O. AND HAROLD E. KLAASSEN	
Burying behavior of the plains killifish, <i>Fundulus kansae</i>	200
MORROW, JAMES E. AND SAMUEL J. HARBO	
A revision of the sailfish genus <i>Istiophorus</i>	34
MOSER, H. GEOFFREY (see AHLSTROM, ELBERT H.)	
MOUNT, ROBERT H. (see FOLKERTS, GEORGE W.)	
MUELLER, CHARLES F.	
Temperature and energy characteristics of the sagebrush lizard (<i>Sceloporus graciosus</i>) in Yellowstone National Park	153
MUIR, B. S.	
Further observations on gill modifications of oceanic fishes	629
MUSICK, J. A. AND J. D. McEACHRAN	
The squaloid shark <i>Echinorhinus brucus</i> off Virginia	205
NACE, GEORGE W. (see RICHARDS, CHRISTINA M.)	
NEVO, EVIATAR AND RICHARD ESTES	
<i>Ramonellus longispinus</i> , an Early Cretaceous salamander from Israel	540
ÖZETI, NECLÂ (see WAKE, DAVID B.)	
ÖZETI, NECLÂ AND DAVID B. WAKE	
The morphology and evolution of the tongue and associated structures in salamanders and newts (Family Salamandridae)	91
PARR, TERENCE D. (see ROSENBLATT, RICHARD H.)	
PAUKEN, ROBERT J. (see METTER, DEAN E.)	
PEDEN, ALEX E. (see HUBBS, CLARK)	
PERRET, WILLIAM S. (see CAILLOUET, CHARLES W. JR.)	
PHILLIPS, GARY L.	
Morphology and variation of the American cyprinid fishes <i>Chrosomus erythrogaster</i> and <i>Chrosomus eos</i>	501
PIAVIS, GEORGE W.	
Rearing of sea lamprey, <i>Petromyzon marinus</i> , embryos in distilled water	204

PIETSCH, THEODORE W.	
A remarkable new genus and species of deep-sea angler-fish (family Oneirodidae) from off Guadalupe Island, Mexico	365
PRESCH, WILLIAM	
Evolutionary osteology and relationships of the horned lizard genus <i>Phrynosoma</i> (family Iguanidae)	250
RAND, A. STANLEY	
<i>Leptophis ahaetulla</i> eggs	402
RAO, M. BABU (see SINHA NAVEEN KUMAR)	
RASQUIN, PRISCILLA	
Undescribed glands in the kidney of juvenile tarpon, <i>Megalops atlantica</i>	83
RATHJEN, WARREN F. (see CALDWELL, DAVID K.)	
RAU, REINHOLD E. (see HULLEY, P. ALEXANDER)	
RENO, HARLEY W.	
Cephalic lateral-line systems of the cyprinid genus <i>Hybopsis</i>	736
RICHARDS, CHRISTINA M., DANA T. TARTOF, AND GEORGE W. NACE	
A melanoid variant in <i>Rana pipiens</i>	850
RICHARDS, WILLIAM J.	
Elopoid leptocephali from Angolan waters	515
RIVAS, LUIS	
Transfer of poeciliid and cichlid fish holotypes from the University of Miami to the United States National Museum	202
RIVAS, LUIS R.	
A revision of the poeciliid fishes of the <i>Gambusia punctata</i> species group, with descriptions of two new species	778
RIVERO, JUAN A.	
A new name for <i>Sphaenorhynchus aurantiacus</i> (Daudin) (Amphibia, Salientia)	700
ROBERTS, FRANKLIN L. (see MAYER, LYNDON J.)	
ROBINSON, E. S. AND I. C. POTTER	
Meiotic chromosomes of <i>Mordacia praecox</i> and a discussion of chromosome numbers in lampreys	824
ROIG, VIRGILIO (see RUIBAL, R.)	
ROSENBLATT, RICHARD H. AND TERENCE D. PARR	
The Pacific species of the clinid fish genus <i>Paraclinus</i>	1
ROUF, M. A.	
Hematology of the leopard frog, <i>Rana pipiens</i>	682
RUBINOFF, IRA (see RUBINOFF, ROBERTA W.)	
RUBINOFF, ROBERTA W. AND IRA RUBINOFF	
Observations on the migration of a marine goby through the Panama Canal	395
RUIBAL, R. (see SHOEMAKER, V. H.)	
RUIBAL, R., LLOYD TEVIS, JR., AND VIRGILIO ROIG	
The terrestrial ecology of the spadefoot toad <i>Scaphiopus hammondii</i>	571
SAVAGE, JAY M.	
Clarification of the status of the toad, <i>Bufo veraguensis</i> O. Schmidt, 1857	178
SCHAFER, JAMES P. (see BARBOUR, ROGER W.)	
SCHMIDT, VON KATHERINE	
<i>Remorina albescens</i> in the Gulf of Mexico, with a note on pigmentation	194
SCHWARTZ, ALBERT	
The status of the name <i>Holotropis microlophus</i> Coetane	620
SHOEMAKER, V. H., L. McCLEANAHAN, JR., AND R. RUIBAL	
Seasonal changes in body fluids in a field population of spadefoot toads	585
SHOMURA, RICHARD S. (see MATSUMOTO, WALTER M.)	
SINHA, NAVEEN KUMAR AND M. BABU RAO	
<i>Dendrophysa hooghiensis</i> , a new species of sciaenid fish from India	77
SMITH, C. LAVETT AND JAMES C. TYLER	
Observations on the commensal relationship of the western Atlantic pearlfish, <i>Carapus bermudensis</i> , and holothurians	206
SMITH, NEAL GRIFFITH	
Avian predation of coral snakes	402
STEBBINS, R. C. (see LOWENSTEIN, J. M.)	
SUTTON, DALLAS A. (see Houser, HAROLD L. JR.)	
TALBOT, FRANK H. (see MATSUMOTO, WALTER M.)	

TARTOF, DANA T. (see RICHARDS, CHRISTINA M.)	
TELFORD, SAM R., JR.	
The ovarian cycle, reproductive potential, and structure in a population of the Japanese lacertid, <i>Takydromus tachydromoides</i>	548
TEVIS, LLOYD JR. (see RUIBAL, R.)	
THOMSON, DONALD A.	
Toxic stress secretions of the boxfish <i>Ostracion meleagris</i> Shaw	335
VILLEY, STEPHEN G.	
Variation in the dorsal pattern of <i>Desmognathus ochrophaeus</i> at Mt. Mitchell, North Carolina, and elsewhere in the southern Appalachian Mountains	161
TRACY, C. RICHARD AND JIM W. DOLE	
Orientation of displaced California toads, <i>Bufo boreas</i> , to their breeding sites	693
TYLER, JAMES C. (see SMITH, C. LAVETT)	
UZZELL, THOMAS	
Notes on spermatophore production by salamanders of the <i>Ambystoma jeffersonianum</i> complex	602
VALENTINE, DAVID W. AND KENT W. BRIDGES	
High incidence of deformities in the serranid fish, <i>Paralabrax nebulifer</i> , from Southern California	637
VALINGHAM, JOHN W. (see MILLER, ROBERT VICTOR)	
VAN VALEN, LEIGH	
What was the largest dinosaur?	624
WAKE, DAVID B. (see ÖZETI, NECLÂ)	
WAKE, DAVID B. AND NECLÂ ÖZETI	
Evolutionary relationships in the family Salamandridae	124
WAKE, MARVALEE H.	
Gill ontogeny in embryos of <i>Gymnopis</i> (Amphibia: Gymnophiona)	183
WALTERS, JOSEPH H.	
Additional observations of southeastern Massachusetts insular and mainland populations of painted turtles, <i>Chrysemys picta</i>	179
WARD, JAMES W.	
Hematological studies on the Australian lungfish, <i>Neoceratodus forsteri</i>	633
WEARY, G. C.	
An improved method of marking snakes	854
WEIGL, GLENN L., RICHARD G. DOMEY AND WALTER R. COURTEENAY, JR.	
Survival and range expansion of the curly-tailed lizard, <i>Leiocephalus carinatus armouri</i> , in Florida	841
WERNER, J. KIRWIN	
Temperature-photoperiod effects on spermatogenesis in the salamander <i>Plethodon cinereus</i>	592
WHITE, FRED N.	
Redistribution of cardiac output in the diving alligator	567
WIEANDT, THOMAS A.	
Vocalization, aggressive behavior, and territoriality in the bullfrog, <i>Rana catesbeiana</i>	276
WOOLCOTT, WILLIAM S. (see LOOS, JULES J.)	
WRIGHT, J. E. (see ECKROAT, L. R.)	
ZEILLER, WARREN	
Maintenance of the yellowbellied seasnake, <i>Pelamis platurus</i> , in captivity	407
REVIEWS AND COMMENTS	210, 409, 642, 858
EDITORIAL NOTES AND NEWS	220, 416, 646, 868
SUMMARY OF THE MEETINGS	870
Index	881